

DESCRIPTIONS OF THREE NEW NORTH AMERICAN CHALCIDOIDEA
OF THE SUBFAMILIES MYMARINAE AND APHELININAE.

BY A. ARSÈNE GIRAULT, OFFICE OF THE STATE ENTOMOLOGIST, URBANA, ILLINOIS.

Family MYMARIDAE.

Subfamily MYMARINAE.

Tribe *Mymarini*.1. *Stichothrix bifasciatiennis* species nova.

Female:—Length 2.108 mm.; wing expanse 3.199 mm.; length of forewings 1.454 mm.; width of forewings 0.364 mm. Comparatively, very large.

General color, dark reddish brown; antennae, legs, and venation in general, yellowish brown, paler; club and 4–5 apical funicle joints of antennae intermediate in color, somewhat dusky, as are also the coxae and femora of the intermediate pair of legs, the femora of the anterior and intermediate legs, and the tibiae of the intermediate legs; the apical three-fourths of the posterior tibiae very dark, more dusky than the general color of the body; the tarsi, and the tibiae of the anterior legs, lemon yellow; articulations of the leg segments and their extremities, pallid; trochanters pale yellow; apical tarsal joints dusky.

Head (caudal aspect) subquadrate, narrower cephalad, the eyes rather small, dark, the vertexal carina present, dark; the three ocelli in a slightly curved line, the middle one more cephalad, the distance between them being about the same as the distance between either of the lateral ones and the margins of the eyes. Thorax slender, not as long as the body of the abdomen, the parapsidal furrows distinct, complete, curved; the scutellum with a longitudinal furrow on each side of the median line (evident on one side in one specimen only); the base of the mesoscutum straight. Abdomen compressed, from lateral aspect acutely ovate, its petiole longer than the posterior trochanters, the sheaths of the ovipositor exerted distinctly beyond the tip of the abdomen, the ovipositor issuing far anterior to the tip of abdomen. Body impunctate, smooth, with scattered setae. Metathorax apparently noncarinate.

Legs long and slender, especially the posterior pair, which greatly exceed the length of the abdomen, and are about as long as the abdomen and thorax combined; the proximal tarsal joint of the cephalic legs subequal in length to the three remaining

joints combined, slightly curved; those of the intermediate and posterior legs longer, distinctly longer than the combined length of the three distal joints; posterior tibiae lengthened, about as long as the tarsi, shorter in the case of the other legs; posterior coxae also lengthened, the femur shortened and somewhat thickened, the coxae and trochanters combined, distinctly exceeding the femur in length; posterior trochanters slenderer and shorter than the posterior coxae, but at least one-half the length of the posterior femur. Tibial spurs minute, more so on the intermediate legs, two on the posterior legs, and largest on the anterior legs.

Fore wings spatulate, rather broad, and moderately thickly ciliate in the discal portion, excepting the usual naked basal portion and a nearly naked area in the middle transparent portion; discal cilia moderately long, dusky; marginal cilia normal, dusky, moderate in length. Marginal vein as long as the apical tarsal joint, pale brown, a single seta arising from its surface just before apex. Fore wings hyaline, with three fuscous transverse bands across them, the proximal one at the marginal vein, small, irregular, and not conspicuous, the second, the largest, crossing the middle of the wing, regular, subquadrate, conspicuous, ciliate, and the third or distal, crossing the outer fifth of the wing, somewhat irregular, subsagittate, or nearly diamond-shaped, but the caudal margin is confused; both fuscous areas somewhat variable in shape; a portion of the lower middle of the distal fuscous area naked; bare spots on the wing somewhat irregular; the small basal fuscous area naked. Hind wings inconspicuous, linear, and very slender; their apices, and toward the base, dusky; marginal cilia moderate.

Antennae not as long as the body, funicle filiform. Scape short, thickened in the middle, longer than the pedicel by at least a third; pedicel short, one side convex, about three-fourths the length of the next joint; funicle 1 cylindrical, slender, not one-half as thick as the scape, two-thirds the length of funicle 2; the latter and funicle 3 subequal, but funicle 2 slightly longer; funicle joints 4 and 5 subequal, shorter, not quite as long as funicle 1, but exceeding the pedicel and funicle 6 in length; the latter still shorter, distinctly the shortest funicle joint, subequal in length to the pedicel and distinctly thicker than the preceding funicle joints, oval in shape; club apparently undivided, thick, oval, at least twice wider than the scape or pedicel, and subequal in length to, or longer than, funicle joints 2 and 3; the club and funicle joints 2 and 3, the longest joints. Antennae moderately hairy, the setae minute, smooth; thickening very slightly at funicle joints 4 and 5, more noticeably at funicle 6, and abruptly at the club.

(From 2 specimens. $\frac{3}{8}$ -inch objective, Bausch & Lomb.)

Male: — Unknown. One of the largest mymarids yet discovered. The species

is easily visible to the naked eye, and then appears to be black, with two-banded wings. No other species of this genus has yet been discovered in North America.

Seen through a lens ($\frac{1}{2}$ -inch, Coddington), the species appears as under the microscope ($\frac{2}{3}$ -inch objective, Bausch & Lomb).

Described from 2 balsam slides of females, received from Dr. L. O. Howard, Chief of the Bureau of Entomology, U. S. Department of Agriculture, Washington, D. C., and labeled as follows: "9900^c. appears to be a parasite of eggs of *Anazipha exigua*. D. C. May 6, 1905." and "9900^c. from eggs of *Anazipha exigua*. D. C. May 29, 1905." Dr. Howard further informs me that the host eggs of this parasite were in the stems of rose mallow on the grounds of the Department of Agriculture, Washington, D. C. Reared by Mr. Theodore Pergande.

Type:—No. 11,846, U. S. National Museum, Washington, D. C., 1 female. *Cotype*, Accession No. 37487, Illinois State Laboratory of Natural History, Urbana, Illinois, 1 female.

Family EULOPHIDAE.

Subfamily APHELININAE.

Tribe *Aphelinini*.

1. *Prospaltella fasciatiiventris* species nova.

Female:—Average length 0.836 mm.; wing expanse, excluding cilia, 1.745 mm.; width of fore wing, 0.29 mm.; length of fore wing, 0.691 mm.

Ground color, dull pale cadmium yellow. The abdomen piceous, shining. Head varicolored; the face silvery white bounded below (the oral surfaces and cephalic cheeks) with piceous, deeply concave; face and clypeus transversely rugulose; the oral opening pale yellow; cheeks finely lined; vertex pale cadmium yellow with some dusky, rugulose transversely; postgenae silvery, finely lined, lower half piceous; occipital region silvery, darker cephalad, with a single, irregular transverse fascia of dusky running through the middle, and originating with the lower piceous portion of the postgenae, margined with dusky caudad (above), finely lined; ocelli ruby red, in a triangle, the distance between the lateral ocelli is greater than the distance between each and the margin of the eye, and the distance between each and the cephalic ocellus; cephalic margin of vertex concave; a distinct dark carina, tracing a concave line from eye to eye, on the caudal margin, touching each lateral ocellus; eyes dark reddish, ovate, moderately coarse, and bearing moderately thick, short, whitish hairs from its surface.

Thorax pale cadmium yellow, the mesoscutum, excepting a marginal path on the lateral and caudal sides, is dusky, making a large triangular dusky marking in the center of the mesothorax; this also involves the pronotum, and its edges are irregular; the entire surface of the mesoscutellum is dusky, excepting the distinct median line, and the extreme margins, and the large axillae are dusky discally, the margins concolorous with the ground color; also the discal surfaces of the parapsides dusky; the mesal aspect of the mesopostscutellum silvery white; otherwise piceus, together with the metanotum, excepting occasionally at the meson; tegulae pallid to dusky. Mesothorax delicately polygonally sculptured, somewhat coarser and more irregular on the scutellum; median line of scutellum longitudinally striate; the sculpture of the axillae similar to that of the scutellum. Caudal margin of mesoscutum straight; scutellum suboval. Thorax caudad of mesoscutellum, shining; about equal in length to the abdomen or shorter; with a few dark setae scattered over its surface.

Abdomen shining piceous black, ovate, the tip silvery white, and a broad transverse fascia of silvery white across the basal third; this is inclined to be wider toward the lateral margin; incisions of segments paler, but not conspicuous; at least the ventro-lateral aspect of the abdomen faintly lined; the dorso-lateral aspect with a silvery sheen. Anal glands distinct, ovipositor slightly exerted.

Wings normal, the venation pale yellowish; the whole of the distal half fuscous, more deeply so in a subquadrate area immediately caudad of the stigmal vein, and less so just distad of the stigmal vein along the costal border of the wing; the dusky area involves about half of the distal third of the marginal vein, and is similar in general to that in the species *murtfeldtii* Howard, but broader and less regular in outline; basal portion of the forewings under the submarginal vein very slightly dusky; cilia less dense in the basal part of the wing, under the submarginal vein; a triangular area just proximad of the basal margin of the fuscous area nearly naked, excepting two or three rows of cilia just below the marginal vein, and two very faint rows through the naked area; at least 5 setae arise from the cephalic edge of the marginal vein, 7 from the submarginal, and 1 from the tegula.

Hind wings normal, hyaline, the distal third of the submarginal vein (that portion not touching the costal border) moniliform; submarginal vein bearing at least four setae from its cephalic edge and the marginal from nine to eleven setae from its surface; fore wings and hindwings densely, uniformly ciliate in the disk, the latter having at least six or seven rows of cilia at the point indicated by a line drawn transversely across the wing through the apical end of the marginal vein (usually from 6 to 9 rows).

Entire legs pale cadmium yellow to pallid, the tibiae and tarsi marked as in *murtfeldtii* Howard; apical tarsal joint blackish at the extreme tip; anterior femora,

however, with a dusky ring around the middle and a less distinct one near its apical end.

Antennae varicolored; basal half of scape, the two apical funicle joints, and the apical joint of club silvery white, with a tinge of yellowish. Apical half of scape, the pedicel and funicle dusky; apical joint of club and funicle 2, more dusky than the silvery white funicle 3; scape slender, reaching to apex of vertex, much longer than the three following joints; pedicel at least one-half longer and also broader than funicle joint 1, cylindrical, tapering caudad; funicle 1 and 2 subequal in length, funicle 2 slightly longer and broader; funicle 3 one-third longer and broader than funicle 2, broader than the pedicel, and subequal in width to the first joint of the club; three club joints gradually tapering, the basal the broadest, subequal in length to club 2, the second slightly narrower and the third, or apical joint, conical, but nearly as long as the others, and abruptly paler.

Flagellum uniformly moderately hairy with white hairs.

(From 5 specimens, killed 24 hours after emergence. $\frac{2}{3}$ -inch objective, Bausch & Lomb).

Male: — Unknown. Nearest to *Prospaltella murtfeldtii* Howard, but differing in antennal structures, coloration, especially in the color of the abdomen, the presence of the dense cilia on the discal surfaces of the hind wings, the carinated vertex, and in sculpture; also somewhat similar to *maculata* Howard in general appearance, but with the characteristics entirely distinct.

Seen with the naked eye, the species is very dark; through a lens (Coddington, $\frac{1}{2}$ inch) the head and thorax are pale cadmium yellow, the thorax with whitish or paler markings and a distinct median line caudad of the mesoscutum; the abdomen appears black, with a distinct silvery or milky white tip, and transverse fascia of the same color across the basal third; the legs and antennae banded, and the distal half of the wings distinctly dusky or clouded, and the base less distinctly so. Seen from the side there is a more or less distinct continuous stripe of silvery white along the thorax and abdomen.

This beautiful species was first reared by Mr. James A. West of this office, in July, 1907, when a single female issued from twigs of fruit trees infested with the San José scale, *Aspidiotus perniciosus* Comstock, obtained at Urbana, Illinois; apparently other hosts were not present. Subsequently reared by myself, in the insectary of this office, from apple twigs infested with *Chionaspis furfura* Fitch, obtained at Urbana, Illinois, on April 3, 1908. Females only were reared.

I have since been informed by Dr. L. O. Howard (*In litt.*, Nov. 23, 1908) that the thirteen specimens of *Prospaltella* reared from new species of *Aspidiotus*, by

Johnson at Champaign, Illinois and determined as *murtfeldtii* by Howard in the last paragraph of page 40, of Bulletin No. 1, technical series, Division of Entomology, U. S. Department of Agriculture, under the original description of *murtfeldtii*, are in reality *fasciiventris*.

Types:— Accession No. 37481, Illinois State Laboratory of Natural History, Urbana, Illinois, 3 ♀s in xylol-balsam.

2. *Prospaltella fuscipennis* species nova.

Female:— Size, normal for the genus. General color silvery white, marked with dusky. From lateral aspect, thoracic pleurum silvery white, with a blackish band along the bases of the coxae, the abdomen banded with black; oral area and lower portion of genae black, and a triangular black area visible dorsad, bordering the eye margin; coxae silvery white. Antennae black, excepting apical club joint which is silvery white with some dusky; scape silvery white, excepting black tip. Face silvery white, margins of eyes black. Eyes yellow with some black. From dorsal aspect, head silvery white with some dusky on vertex, and a transverse dusky band just below the occipital margin, beginning laterad at the eye margin; disk of mesoscutum, the axillae and the tegulae dusky; mesoscutellum with the caudolateral halves on each side of a rather broad median line, black; all of mesopostscutellum and mesal portions of the metanotum silvery white, the rest dark. The whole of the abdomen dusky, excepting the narrow lighter incisions in the dorsal region, which paleness becomes broader laterad and silvery white. Legs, silvery white; posterior proximal tarsal joint black, the posterior tibiae with two black bands; knee of posterior legs black; other legs as in *maculata* Howard. Whole body delicately polygonally reticulated. Fore wings and hind wings uniformly infuscated, steel bluish, the fore wings hyaline however to insertion laterad from apical bend of the submarginal vein, infuscation deeper beneath (caudad) the stigma; discal cilia of both wings numerous and close, from four to five longitudinal lines in the hind-wings. Venation dusky, usual.

Pedicle wider and longer than the first funicle joint; joints 2-3 of funicle subequal, $\frac{1}{2}$ longer and broader than funicle 1; club joints 1 and 2 subequal, nearly equal to joints 2 and 3 of the funicle; apical club joint conic, as long as the others. Antennal joints uniform; longitudinal carinae prominent.

Ventum of thorax silvery white, of abdomen blue-black.

Male:— Unknown.

Nearest to *fasciiventris* Girault but differing in the uniform coloration of the funicle, lacking broad white band on abdomen, fore wings infuscated further proxi-

mad (to the apical bend of the submarginal vein), and deeper in color, and the more noticeable infuscation of the hind wings.

Type:— *Accession No.* 39306, Illinois State Laboratory of Natural History, Urbana, Illinois, 4 females in balsam. *Cotype* — *No.* 12106, United States National Museum, Washington, D. C., 1 female in balsam.

Described from six females mounted in balsam, reared from (*Chrysonomphalus*) *Aspidiotus obscurus* (Comstock) on oak, Marion, Illinois (W. P. Flint). The parasites were reared in the insectary of this office, August 11–13, 1908. The description of coloration and sculpture was made from unmounted specimens, killed with chloroform.

AUTUMN FLIGHTS OF SPIDERS. At Readville, Mass., November 9, 1908, over two hundred spiders were taken flying or on fences between the railroad station and the bridge across the Neponset river, of the following species.

Adults — *Goniatium rubens*, *Spiropalpus spiralis*, *Stylophora nigrina*, *Tmeticus contortus*, *T. concavus*, *T. plumosus*, *T. bostoniensis*, *T. tridentatus*, *Cornieularia directa*, *Erigone dentigera*.

Immature — *Epeira prompta*, *E. displicata*, *E. strix*, *Singa variabilis*, *Dictyna volucripes*, *Theridium murarium*, *Ero variegata*, *Amyphena rubra*, *Pirata insularis*, *Pardosa glacialis*, *Dolomedes sexpunctatus*.

The morning had been foggy but had cleared early and the air was nearly still at a temperature of 50°. At 10 A. M. thousands of these spiders were walking up posts and trees along the roadsides and others were floating on threads in the air drifting slowly across the marshes from the southwest. Threads up to ten feet long extended from fences to trees and telegraph poles and floated out in the air, some fine single threads but more of them irregular bands of white silk one eighth of an inch or more wide apparently made by many spiders passing over them.

The most numerous species were *Stylophora nigrina* and *Tmeticus concavus*. *Erigone dentigera*, the most numerous species flying in the cities, was represented by only a few individuals. The largest species were half grown *Pardosa glacialis* and *Dolomedes sexpunctatus* which succeeded in flying off the fences as well as those of lighter weight. Spiders of both sexes, different species and all sizes worked within each other's reach on the same post without fear or any attention to one another. If they chanced to touch they moved apart and went on with their efforts to fly. The flying continued until toward noon when the wind increased and made it impossible. The tops of posts and fences were covered with silk showing that flying had been going on for many days and it continued every calm morning through the month.

J. H. EMERTON.